

# RIVERWAYS

## Newsletter

## Spring 2000

A Publication of the Riverways Program

Department of Fisheries, Wildlife & Environmental Law Enforcement, David M. Peters, *Commissioner*  
Executive Office of Environmental Affairs, Bob Durand, *Secretary* • Argeo Paul Cellucci, *Governor*

### Plan Now for Another Dry Summer

According to the January 13 Department of Environmental Management current conditions report, as of December 1999, streamflows and ground water levels were near normal for most of the state but precipitation was below normal. Prior to the end of January, LaNina conditions resulted in a relatively mild winter, with a lack of snowfall. Winter snowpack is important because most surface water reservoirs as well as groundwater rely on spring snowmelt for recharge prior to the heavy water use period of summer.

While the rainfall we have received is important, this water is not efficiently absorbed into the frozen ground during the winter. Instead, it runs off into surface water drainage rather than becoming part of the groundwater system. We rely heavily on the spring snowpack and its ability to recharge groundwater because it is baseflow that sustains our rivers during the dry summer months.

The Massachusetts Emergency Management Agency as part of the Drought Management Task Force will meet on February 23 to make recommendations about the need for water use restrictions during the summer of 2000. The Drought Management Task Force is a group of state and federal agencies that is developing a standard operating procedure for dealing with droughts in Massachusetts. They will be looking at current conditions as well as National Weather Service reports to make recommendations for water suppliers. Water suppliers should evaluate the need for water restrictions now to avoid shortfalls that occurred last summer.

Why plan for a drought? By June of 1999, according to the National Weather Service drought statement, Eastern and Central Massachusetts had received only 75-85% of normal rainfall for the year. In Eastern Massachusetts, this total was 5-8 inches below normal. While last summer was not as bad in many areas as 1995 or 1997, the drought was newsworthy because it was widespread across the Northeast and Mid-Atlantic States and low flows were occurring notably early. As in previous years, Massachusetts witnessed an increasing number of streams running at extremely low flow or drying up altogether (see related article in Riverways Fall 1999 newsletter).

Is this just about drinking water? When streams dry up fish and aquatic insects lose their habitat. Because streams often dry up in isolated sections, fish and other animals dependent on the stream for movement are cut off from the rest of the resource. Animals that use the stream banks for habitat are also affected when the river recedes from its banks.

While rivers naturally have a range of variability throughout the year, any significant change from that yearly cycle has an adverse impact on the habitat qualities of that river. Natural systems have evolved strategies for surviving periodic drought, but summer water withdrawals that are two to three times greater than average can prolong low flow events.

*Continues, page 2*

### River Restore Program Update:

#### A Tale of Two Rivers

Drilling with a hand auger in the small impoundment behind the earthen dam at Billington Street in Plymouth reveals that the original streambed of Town Brook lies only six inches to two feet below a layer of sand and silt. Further exploration reveals that cobbles two to six inches in size are buried there. These cobbles have likely been waiting to be uncovered for three hundred years since the first dam was constructed at this site.

We have no living memory of this river without dams – its abundant, steady year-round flow and spring flush of alewives attracted and sustained the Pilgrims. Dams have been a feature on this landscape since 1632.

Today, the fish who make it past the five dams on Town Brook to their spawning grounds in Billington Sea do so in the back of a special truck after being netted by the Massachusetts Division of Marine Fisheries. Time has caught up with the dams and their fishways, deteriorating their condition and compromising their function. Restoration of the Town Brook alewife fishery involves construction of a new fishway at Newfield Street and removal of the earthen dam at Billington Street.

The dam decommissioning Task Force, a group of state and federal regulatory and management agency staff, is using Town Brook as a pilot project. This project is currently under review by the Massachusetts Environmental Policy Act (MEPA) and is teaching the Task Force a great deal about how to evaluate dam removal projects under Massachusetts and federal environmental regulations. This project will also teach us a great deal about the uses of the river following settlement and perhaps before.

The Town Brook is listed in the National Register of Historic Places and the earthen dam at Billington Street was once the

*Continues, page 19*



*Non-functioning fish ladder and culvert at Billington Street Dam. Photo by Laura Wildman of Milone & MacBroom, consultants for town of Plymouth*

### **Flow Initiatives**

In areas such as the Ipswich River watershed, last year's lack of spring rainfall combined with water withdrawals to create dry riverbeds downstream of well fields. The U.S. Geological Survey is working in cooperation with other federal, state, and local groups to investigate the impacts of reduced streamflow in the watershed on habitat and water supply. They are developing a watershed model that will be used to investigate various water-use scenarios by simulating natural flows in the river. They are also trying to understand the relationship between flow and the availability of habitat at critical areas along the river.

The Headwaters Stream Team of the Ipswich River Watershed Association released a *Flow Impairment Report* for the summer of 1999 on the headwater streams in the Ipswich River watershed, showing a connection between areas of dry riverbed and the location of town wells.

The Ipswich River watershed is a major source of water for 15 cities and towns in or near the basin, and the river relies heavily on baseflow from groundwater and wetlands. The headwater streams report shows through photographic evidence that these three streams flowed both up and downstream from the influences of well fields.

The USGS is also working with the Charles River Watershed Association to use computer models to simulate groundwater in the Upper Charles River watershed. CRWA is also beginning demonstration projects to capture rainwater and use it to replenish groundwater. In the towns of Holliston and Bellingham, recycled wastewater is also being recharged to the ground.

The Neponset River Watershed Association is working on the East Branch of the Neponset River in the towns of Canton, Sharon and Stoughton to collect data on flows and habitat in the river. Volunteers have been collecting data on daily streamflow, precipitation and evaporation, soil moisture and groundwater since last February. They are also assessing habitat and river health by taking samples of macroinvertebrates and will start macroinvertebrate identification training in February.

The Department of Environmental Protection has collected information on fish populations in the East Branch, and a trio of experts will be working with the watershed association to determine if target habitats exist during different flows throughout the year. These experts, a fisheries biologist, insect biologist and a fluvial geomorphologist will assist the watershed association in determining whether proper habitat is being maintained for the identified species.

### **Better Planning for Water Resources**

While the low rainfall amounts contribute to low flow in streams and rivers, the impacts of figures like this are hardest felt when we place too high a demand on our water supply. Unrealistic expectations often contribute to overestimating water supply, and we are increasingly using crisis management to deal with fluctuations in climate and water needs. How do we plan better? Planning for a drought means using our knowledge of the water cycle to plan for the water needs of a region or town.

### **Sprawl and Environmental Zoning**

Sprawling suburban development has led to the problem of overestimating our water supply potential by spreading residential development into previously open areas. Sprawling development means that we are using up a greater area of land per person as we flee urban centers and expand our suburbs. Increasing development brings along with it issues of increased water use, increased

impervious surfaces and runoff, and an increase in sewerage which sends water to treatment plants and often out of the watershed instead of allowing for natural recharge.

According to the Massachusetts Audubon Society Report, *Losing Ground*, between 1972 and 1996 the Commonwealth's population increased roughly 6%, but the amount of developed land increased roughly 59%. This process causes us to be more physically spread out across the landscape and less connected to our resources. Sprawl is also fragmenting habitat and changing the hydrology of our wetlands and streams.

Sprawl is caused largely by zoning regulations that allow conventional subdivisions to be built easily but require a special permit for any other type of conservation or cluster subdivisions as well as compact town centers with mixed use zoning. This makes it very difficult to recreate existing village centers and to pursue environmentally sensitive development.

One area of the Commonwealth that is experiencing increasing growth pressures is the Route 495 corridor. The demand on water supplies and increasing impervious surfaces in these communities is leading to low instream base flows and increased impacts on water quality. The Charles River Watershed Association has been working in the Town of Holliston on a pilot project to use Environmental Zoning as a way of planning for growth. This method incorporates the science of hydrology into the decisionmaking process, using the town's desire to protect character as described in the Master Plan. This planning process gives towns the ability to direct future development to areas that will less likely be impacted by development.

For this project, Geographic Information Systems and hydrologic analysis were used to identify areas suitable for stormwater recharge, wastewater disposal, and water quality protection. The major recommendation from this work was that the town should keep wastewater within the watershed by recharging groundwater. The town will use its Master Plan to develop amendments to local zoning bylaws for better stormwater management and landuse planning.

### **Town Bylaws**

Towns are increasingly using by-laws to change development patterns or to create water conservation measures. Several communities on the North Shore are preparing a Conservation Subdivision by-law that would allow for cluster development in these towns. Cluster development creates less impervious surface because it uses shorter road lengths and greater amounts of open space while creating the same number of housing units.

Stream Teams in the Ipswich River watershed are currently involved in developing a town by-law that would require private well owners to adhere to the same water conservation measures as those homeowners using municipal well water. If the bylaw is passed, all well owners would be subject to outdoor watering bans set by town water boards. This encourages the equitable distribution of resources, and makes water bans enforceable on a town-wide basis.

Towns also use by-laws that allow them to set outdoor watering bans without prior declaration of a water emergency by the Department of Environmental Protection. As of about 10 years ago, towns were required to go to DEP before they could trigger a water ban, but now about 107 towns in Massachusetts have this by-law in effect. If you are interested in using a similar by-law in your town, a model can be found on the web at: [www.magnet.state.ma.us/dep/brp/dws/files/wmabylaw.pdf](http://www.magnet.state.ma.us/dep/brp/dws/files/wmabylaw.pdf)

*Continued, page 19*

---

## Special Section

# The Massachusetts Watershed Initiative: Moving into the 2000s

### The EOEA Challenge: Linking its Initiatives with the Massachusetts Watershed Teams

Secretary Bob Durand, his Commissioners and staff have lost no time in making the Watershed Initiative central to their environmental agenda. Now the questions are:

What is or should be the role of the Watershed Initiative Team Leaders and Watershed Teams as part of these unfolding initiatives in **land protection, community preservation, river restoration, biodiversity, conservation, pollution prevention and environmental education**?

How much can the Teams and Team leaders be expected to participate in these initiatives?

Where should Team Leaders take on a leadership role?

What is the most useful, most appropriate part for Teams to play?

Is there sufficient staff support for the Teams and funding to insure success?

How do these Initiatives encourage resource protection decisions that result in preventing problems before they occur?

#### Land Protection

Bob O'Connor, Director of Watershed Management, has recently added to his duties leadership of the EOEA interagency lands committee. A new Watershed Manager and Lands Policy Coordinator will assist him in his new position as Director of Watersheds and Land Policy.

The interagency lands committee, composed of land protection experts from each of the EOEA agencies, meets monthly to share information on lands being considered for acquisition by the EOEA agencies. Each agency has developed criteria for land protection that relates to the mandate of each agency. For example, as the Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE) is charged with protecting the Commonwealth's flora and fauna, DFWELE's land protection program is primarily geared toward protecting areas of significant wildlife habitat.

Funding for state open space land acquisition each year depends in large part upon the share of the overall \$1 billion annual Massachusetts capital expenditure that is allocated to EOEA and its constituent agencies. The capital spending cap resulted from an agreement ten years ago between the state and Wall Street financiers in which the state agreed to place a limit on its level of bonded indebtedness in exchange for maintaining a favorable credit rating (which helps keep borrowing costs low). Expenditures authorized under the various Open Space Bond bills (passed by the legislature in 1996 and earlier) must compete with other legislative bond authorizations for seaports, prison construction, transportation, etc. for a share of the \$1 billion annual cap.

Currently, EOEA Secretary Bob Durand is developing strategies to meet the goal of the Governor to protect 200,000 acres of land by 2008. He is building on agency recommendations and the Massachusetts Resources Inventory Project which used data layers in the Mass Geographic Information System to identify potential protection areas. He and his staff are recommending that funds be spent on acquisitions that protect the most ecologically significant areas, some of which may be identified through the biodiversity initiative. Land Trusts (of which there are currently over 140 active in Massachusetts) are also being asked to make recommendations that will lead to better coordination of respective land protection agendas.

In addition to these recommendations and those of the EOEA agencies' land protection staff, the Secretary is asking the Watershed Teams to identify biologically important areas in each watershed, particularly land that will connect already protected lands. In a number of cases, land trusts and watershed teams are working together to complete watershed-wide open space plans that address protection of natural communities and open spaces that go beyond town boundaries. Results of efforts to identify, assess and map significant ecosystem resources, ongoing in six watersheds, will be utilized as completed.

#### Community Preservation

The link between the Watershed Initiative and the Secretary's Community Preservation Initiative is still in the formative stages. The Secretary's Community Preservation Breakfasts being held around the state in senatorial districts are attracting large groups of legislators, town residents, local officials and community leaders. The full build-out scenarios of the towns give them a chance to see how increased development can change a town's character if not done with foresight and planning for historic preservation, affordable housing and environmental protection. Townspeople are asked to put forward issues that the towns are facing in their efforts to keep the character of their communities intact, maintain a healthy environment, and yet continue to grow.

Secretary Durand and his colleagues, Jane Gumble Director of the Department of Housing and Community Development and Carolyn Boviard, Director of the Department of the Office of Economic Development, speak at these breakfasts and encourage towns to take advantage of the respective agencies' programs and technical assistance. Some Team leaders are participating in the build-out presentations that will be offered to each town as they are completed across the state.

At the breakfasts the Secretary introduces Watershed Team leaders and Watershed Association directors as valuable players. The challenge for EOEA and the Watershed Teams is how to work more closely on strategies that can build on the momentum of the breakfasts and bring in new interests and participants to the Watershed Teams to assist in addressing the issues that towns face in water supply and water conservation as well as open space and habitat protection. The teams are, or have the potential to be, effective instruments for planning and implementation of the overlapping strategies that preserve community character while providing protection for healthy watersheds.

#### River Restoration and Biodiversity Conservation

Closely related to the two initiatives of protecting open spaces and preserving communities are the EOEA Initiatives to conserve biodiversity and restore free flows to rivers.

In May, 1999 Secretary Durand and Commissioner Dave Peters announced the River Restore Program to reconnect natural and cultural river communities through selective removal of obstructions, particularly dams. Selection for removal depends on condition and use: some dams still function safely for a useful purpose while others are in poor and unsafe conditions and have outlived their usefulness. Selection to remove or keep dams also relates to natural resources that are at risk or are important for restoration.

*Continues, next page*

Selection also looks to how many unobstructed river miles will be opened up. The Program has received many requests for assistance in evaluating present conditions.

The Dam Decommissioning Task Force is lead by Karen Peltó, River Restore Coordinator. The Task Force is comprised of staff from the DEM Dam Safety Program, the Divisions of Marine Fisheries and Mass Wildlife, and the DEP Wetlands and Waterways Program. Representatives of EOEA, EPA, USFWS, NMFS, NRCS, Mass Historic Commission and Mass Department of Energy Resources also are part of the Task Force.

Watershed Team Leaders in the Housatonic River watershed and the South Coastal watersheds and field staff at Coastal Zone Management have taken part in the planning and outreach around the first two pilot projects: one on the Housatonic River in Dalton and one on Town Brook in Plymouth. CZM regional staff are taking a leadership role in securing funding and other support for the Town Brook Restoration.

These pilots are outlining standard approaches to assessment of dam removal projects. This will be useful to dam owners and teams across the state currently pursuing improvements in fish passage for anadromous fish or interested in extending river reaches free of obstacles for other fisheries, as on the Deerfield, Connecticut, Parker, Taunton, French, Quinnebaug, Blackstone and Neponset Rivers.

As part of EOEA's Initiative on Biological Conservation and Ecosystem Protection, a comprehensive ecosystem assessment is being undertaken in the southeast by several partners including the Natural Heritage Program, the Manomet Bird Observatory, the Buzzards Bay Coalition and the SE Wildlands Trust. A similar project is underway in the Housatonic River watershed in the Berkshires.

In addition, volunteers of all ages are being recruited within each watershed by EOEA for this spring's state-wide effort to locate and document vernal pools and identify all kinds of flora and fauna along rivers and streams, in fields and forests, in wetlands and up on hillsides in each of the 351 towns on Biodiversity Days, June 8th - 11th. Again the Watershed Team Leaders are being asked to help. They are encouraged to identify contacts in each town to help organize and train volunteers for the field identification work.

### **Pollution Prevention**

Another important question is how best to utilize the expertise of pollution prevention specialists at EOEA. Few realize that from 1990 to 1997, as a result of the state's Toxics Use Reduction Act (TURA), 274 million pounds of toxic chemical use by companies covered by the law has been eliminated. TURA staff's recent Ford Foundation award for excellence in government highlights the importance of this accomplishment. Many other companies covered by the law have also reduced the use of toxic chemicals, and the wastes, discharges and emissions that result from chemical input.

Are there ways to transfer the lessons we have learned from this program to other areas of environmental protection through the Watershed Initiative? Answering this question involves more than simply developing optimal local approaches to reducing chemical use at the source, by municipalities, by facilities within their jurisdiction, and within land protected areas, but also fully incorporating the philosophy and techniques of prevention as opposed to regulatory controls.

One approach is to look at a watershed holistically to see how different systems are interrelated. By recognizing and valuing this inter-relatedness, we can make better management decisions con-

cerning all issues affecting a watershed. A good example of this is found in the review of all waste water and water withdrawals in a single watershed at the same time through the Watershed Initiative five-year cycle. The intent of this approach is to encourage state, municipal and private water users to look at the cumulative impacts of discharges and withdrawals on a river system.

In essence, resource protection is itself a preventive approach, but the question to ask is do programs, rules, and projects work effectively enough to recognize and seize every opportunity to avoid problems, not only to solve them?

### **Environmental Education**

Secretary Durand has set out the ambitious goal of reaching every public school in Massachusetts. He sees this as possible through participation of environmental agencies staff who have joined his efforts in presenting environmental education programs in the schools. By June 2000 he hopes to have reached all schools in Southeastern Massachusetts.

EOEA staff involvement complements impressive efforts of Watershed Initiative partners who are working with schools on hands on environmental issues relating to rivers, habitat, land, wetlands, farmlands and vernal pools. The Westport River Watershed Alliance, the Southeast Environmental Education Alliance, Bridgewater State College, Waquoit Bay National Estuarine Research Reserve and UMass Cooperative Extension are some of the partners who are assisting in targeting environmental education efforts on the important environmental issues in the communities in the southeast.

The Taunton River Watershed Connections Project and the Mass Bays Watershed Stewardship Programs serve as models for tackling more in-depth stewardship activities related to land management, planning water quality and watershed monitoring, and using Best Management Practices. The *Watershed to the Bays* curriculum tools developed with science, math, history and language arts teachers in many schools in the Mass Bays area by Faith Burbank and Barbara Waters of UMass Cooperative Extension services gives teachers the opportunity to apply this approach in their areas. In its second year the educational component of the South River Initiative uses the tools of the *Watershed to the Bays* curriculum to address the five major issues of the Mass Bays Comprehensive Conservation and Management Plan (CCMP) with assistance from UMass graduate students. This interdisciplinary, inquiry based approach to learning is a promising avenue to educational reform that will incorporate environmental education into year long curricula with outcomes linked to *Massachusetts Frameworks for Science & Technology Standards*.

In addition, thanks to coordinated efforts by the trainers at MDC's Project WET, DEM's Project Learning Tree, and DFW's Project Wild, employee volunteers from EOEA and other environmental agencies have received training at five employee education workshops. These workshops were designed to introduce EOEA employees to several environmental education classroom activities and different teaching techniques.

School classes and after school groups such as Scouts and 4-H can learn more about their rivers and streams by joining activities during RIVERS 2000 MONTH in June. The Riverways Rivers Month Calendar, listing over 100 volunteer-led activities, will be available from Riverways by late May. Students can join watershed associations in river cleanups or organize their own cleanups on the river or stream near their school. Guidelines and reporting forms will be available at Riverways. Please see the Riverways web page or contact the Riverways office at 617-626-1541. ●

---

## Recent Successes Flowing from the Watershed Initiative

### Instream flow investigations

Watershed associations are active partners in designing and participating in research studies funded by federal and state agencies that will determine instream flow levels necessary for maintaining aquatic ecosystems for the Ipswich, Neponset and Charles Rivers.

### Total Maximum Daily Load Planning

Watershed Teams and environmental groups in the Sudbury\Assabet\Concord (SuAsCo) and the Nashua River watersheds are working with the municipalities and the DEP staff to make sure that decisions on discharge permits will improve water quality by determining total daily maximum loads for pollutants of concern.

### Stream Team action plans and follow up

Stream Teams from east and west are working on land and water issues: monitoring water quality, reporting problem pipe discharges, advising landowners on stewardship options and organizing streambank cleanups. In the SuAsCo and Ipswich River watersheds Stream Teams are working on flow issues: documenting dry riverbeds and working on water conservation bylaws. Stream Teams in the Charles and Assabet have web pages to educate their communities about river issues. Stream Teams in the Blackstone, Nashua and Ipswich River watersheds have used information found on the Shoreline Surveys to support land purchases. Stream Teams

in the Neponset, Housatonic and Concord River watersheds are working to protect important habitats.

### Combined Sewer Overflow (CSO) and Stormwater reductions

Residents, public officials and watershed groups along the Mystic, Merrimack and Charles Rivers have been instrumental in getting EPA to provide financial support for studies and notifications to municipalities that they must become pro-active in cleaning up CSOs and putting in storm water management controls.

### Fencing cows out of streams

Watershed Team Leaders in the Deerfield and Connecticut River watersheds assisted farmers in getting funds for fencing and recruiting volunteers to install fencing to keep livestock away from streams and enable the reestablishment of streamside vegetation encouraged by federal and state policies and legislation such as the River Protection Act. Team Leaders also helped secure funding for farmers along the Connecticut River to reduce farm wastes from degrading water quality in the river and tributaries.

### Keeping water in the watershed

The Charles River Watershed Association has taken the lead with towns in the upper watershed to change how wastewater is disposed of, resulting in more treated wastewater being discharged into local groundwater and aquifers so that it can replenish community groundwater supplies.

### And many more ...

---

## WATERSHED TEAM LEADERS and TEAMS face many challenges

The EOEA Team Leaders presently serve as the conveners of the Watershed Teams on a monthly or bi-monthly basis. They work with Watershed Associations to make sure that these meetings are forums for sharing information on issues of concern in the watershed. They are largely responsible for communication among team members and others (town officials, federal and state agency staff, watershed businesses, regional planning agencies, consultants and university researchers) between meetings on priority issues. This communication network contributes to matching technical assistance with community needs, education and outreach about the watershed approach to the protection and management of natural resources, and the development of annual workplans and priority projects.

Sometimes Watershed Teams comment on permit limits for waste water discharges (NPDES) or water withdrawals and allocations (Water Management Act), on plans for restoring fisheries or on development plans being reviewed and permitted by MEPA. Teams focus on riverbank restoration, solving flooding issues, water quality improvements or whatever issues are critical in their watershed. All try to increase the understanding of the watershed approach to natural resource management and protection. Teams have members from the state and federal agencies who have diverse interests and skills to bring to the table. The Riverways Program staff serve on all of the Watershed Teams.

### Team Leader training

All Watershed Initiative Team Leaders meet together regularly every month with the EOEA Watershed Initiative staff to discuss common concerns, to develop strategies for strong team function-

ing, and to learn more about EOEA agency programs and tools. Over the last 18 months they have had informal presentation/discussions on the following:

- The Vision for EOEA and the Massachusetts Watershed Initiative (MWI) -Secretary Durand
- Overview of new EOEA organization and the MWI - Sharon McGregor
- Incorporating the MWI into Transportation Planning - (MHD) Louisa Paiewonsky, (MAPC) Barbara Lukas, (EOEA) Deidre Buckley
- Planning for Growth and the MWI (EOEA) John Lipman
- Community Preservation Initiative (EOEA) Priscilla Giegis
- Build-outs and products beyond build-outs (EOEA) Kurt Gaertner
- EPA's Smart Growth Initiatives (EPA) Alison Walsh & Rosemary Monahan

### Tools of the trade in state programs:

- Wetlands Banking and Restoration Program (EOEA) Christy Foote Smith
- SWAP Source Water Assistance Protection (DEP) Ken Pelletier
- Agricultural Water Quality Program (DFA) Susan Phinney
- Inland Fisheries Program (DFW) Mark Tisa
- River Restore Program (Riverways/DFWELE/EOEA) Karen Peltó
- Fish Passage Planning & Design (USFWS) Dick Quinn
- Flood Hazard Planning Program (DEM/FEMA) David Mendelsohn
- Strategic EnviroTecnology Partnership STEP Program (EOEA) David Lutes & Paul Richard

*Continues, next page*

---

### ***Watershed challenges, continued-***

- Shoreline Surveys/Adopt-A-Stream Program (DFWELE/Riverways) Joan Kimball
- Interagency Land Committee (EOEA & Agencies)
- MA Resources Inventory Project (GIS) Mark Goodwin

#### **How the regulatory processes work:**

- Interbasin Transfer Act Performance Standards (EOEA) Mark Smith
- New MEPA Regulations (EOEA) Jay Wickersham, Laura Rome, Arthur Pugsley
- Natural Resources Damage Program (EOEA) Dale Young
- Environmental Education initiatives (EOEA) Melissa Griffiths
- Stormwater Districts, Fred Paulsen

#### **Funding sources and follow up:**

- Nonpoint Source 319 Program (DEP) Beth McCann
- Capacity/Stewardship Building Grants (EOEA)
- In addition there have been several day-long training sessions.

- Team Building (UMass)
- Community Outreach and Involvement (UMass)
- Facilitating Collaborative Problem Solving (UMass)
- Tom Schueller's Rapid Watershed Planning (Center for Watershed Protection)

#### **Next Steps**

The session on Rapid Watershed Planning training was open to team members in addition to the Team Leaders. Many agency staff and watershed association representatives attended. Sharing of training in assessment tools and in the process of team building and functioning as a decision making body among this larger group is highly desirable. The Riverways Program is developing a proposal and seeking funding for additional intensive training in Team building, facilitation and problem solving that would serve the Watershed Initiative team members over the next two years. Please contact Maria Van Dusen if you are interested in helping form this proposal. ●

---

## **The Watershed Initiative: Measuring Successes & Identifying Future Directions**

A lot has happened, particularly in the last couple of years, to build on the beginnings of the Watershed Initiative in the Neponset River watershed in 1993 and to create a strong force for environmental protection in the 2000's.

How can we best target our efforts to achieve significant and measurable environmental improvements? We could use measures such as the following to tell us what we have accomplished and where we need to focus:

- ✱ number of state water use permits that realize water conservation goals and protection of habitats,
- ✱ number of miles or % of streambank protected in a subwatershed,
- ✱ number of projects or % of development that is setback 100' and 200' from major rivers in a watershed,
- ✱ natural resource inventories and ecological assessments that locate significant habitats and high water quality,
- ✱ numbers of municipal decisions on zoning, transportation and health regulations that limit sprawl,
- ✱ miles of rivers restored to free flowing by dam removal or breaching,
- ✱ miles of streamside greenways and trails established,
- ✱ numbers of new public access points to/and/or along rivers and streams,
- ✱ number of stormwater permits implemented,
- ✱ number of TMDLs established and being implemented,
- ✱ acres of wetlands restored,
- ✱ number of "entering watershed" signs installed along highways.

#### **What else is needed?**

- ✱ legislation that provides community preservation funding for land protection, affordable housing and historic preservation,
- ✱ legislation that prevents Chapter 97 lands in conservation, particularly riverfront lands, from being converted to sites for schools, wastewater treatment plants, etc.,
- ✱ legislation that includes incentives for sustainable development and sustainable communities,
- ✱ Mass Highway Department involvement and commitment to environmental protection and release of ISTEA and T21 funding for greenways and alternative transportation projects,

- ✱ water conservation legislation to spur communities toward more efficient water use, enabling more water to be retained in the natural environment where it is critically needed by water-dependent ecosystems and organisms,
- ✱ EOEA and MWC joint training for watershed teams, team leaders and watershed associations for more productive teams and increased environmental results,
- ✱ DEP Nonpoint Source/Storm water program of technical assistance to municipalities and landowners
- ✱ more scientific expertise to assist teams, municipalities, watershed associations to inventory and map habitats, to determine water budgets, and to assess stream, wetlands, and watershed health,
- ✱ more assistance with applications of GIS to provide watershed groups with tools to enhance planning and decision making,
- ✱ connections to and support for university researchers who can provide modeling information/results for municipalities, watershed teams and associations to assist them in making good environmental decisions that address cumulative impacts of changes in watersheds,
- ✱ stronger Regional Service Providers to assist volunteers in all aspects and types of monitoring,
- ✱ technical assistance and grants to assist municipalities in conserving water.

Much is happening at different levels and in different places around the state. There are some wonderful prototypes and models for others to build on. However, for the watershed approach to work better, we need to enable stronger partnerships in each watershed among smaller towns, urban centers, businesses, and landowners. We need to provide sufficient training and assistance to groups to use the tools available for making decisions on upstream activities that will enhance conditions downstream.

Because fixing all the problems at once is not cost effective, we need to collaborate on setting priorities for each year and each five-year interval, based on actual conditions using best available data and procedures. We have accomplished a lot in the past seven years, now let's marshal the resources to do an even better job in the next four. ●

## New Watershed Initiative Staff

Starting January 24, 2000 Michael Dibara is the new Team Leader for the Charles River Watershed. He will work out of the Elm Bank Reservation office in Dover/Wellesley. Mike has worked for the DEP for seven years, with three years as Deputy Director in the Worcester Regional Office.

Kwabena Kyei-Aboagye, Jr. is the new Assistant Team Leader for the Mystic River Watershed, including the Chelsea Creek watershed. Kwabena has a background in environmental planning. He worked on plans for light rail development in Seattle, WA.

Ryan McGorty is serving as the Watershed Initiative Outreach Coordinator at EOEa. Ryan has mostly recently been an intern for four Watershed Teams in the southeast: Buzzards Bay, Ten Mile/Narragansett, Taunton and South Coastal watersheds.

## The Watershed Initiative Steering Committee begins its next chapter

The Watershed Initiative Steering Committee (WISC) is charged with advising the EOEa Secretary on the Watershed Initiative.

At their January meeting, the WISC accepted the Report of the WISC Progress Evaluation Subcommittee which was based on responses to the 1999 Watershed Team survey by individuals and organizations on the Teams' mailing lists. The WISC Executive Committee will use this report and other input to make Recommendations to Secretary Durand next month. If you have suggestions, please contact a member of the Executive Committee. The WISC is composed of 39 members representing different interests.

The present Executive Committee members are:

- Ralph Goodno, WISC President, Merrimack River Watershed Council <rhgoodno@aol.com>
- Christine Armstrong, EOEa <christine.armstrong@state.ma.us>
- Lyn Billman-Gollemme, Billman-Gollemme Associates <billman-gollemme@worldnet.att.net>
- Nancy Bryant, SuAsCo Watershed Coalition <suasco@compuserve.com>
- Jamie Fosburgh, National Park Service <Jamie\_Fosburgh@nps.gov>
- Ed Himlan, Massachusetts Watershed Coalition <mwc@ma.ultranet.com>
- Robert O'Connor, EOEa <Robert.Oconnor-ENV@state.ma.us>
- Arleen O'Donnell, DEP <Arleen.Odonnell@state.ma.us>
- Maria Van Dusen, DFWELE Riverways <Maria.Van.Dusen@state.ma.us>

**THE MASSACHUSETTS WATERSHED COALITION** takes steps to extend its services in support of the Watershed Initiative.

Over the years the Watershed Coalition has been instrumental in guiding the formation and development of the Watershed Initiative. It represents Watershed Associations which serve constituents in each of the twenty-seven major watersheds and many tributary watersheds, including over fifty stream teams.

The Coalition is committed to the protection, sound management and enhancement of the Commonwealth's rivers and watershed ecosystems.

In the year 2000 the Coalition takes as its challenges the following:

- advocating for better policies and decisions affecting river systems,
- improving the availability of watershed science and the transfer of technical assistance,
- strengthening grassroots groups by enabling watershed groups and stream teams to partner with agencies and take a lead role in community protection of resources,
- building a watershed constituency that involves people in every city and town.

For more information contact the Massachusetts Watershed Coalition at 978-534-0379 or at mwc@ma.ultranet.com.

Ed Himlan, *Executive Director*

Michelle Bennett DeCocteau, *Capacity Building Trainer*

Tom Spiro, *Outreach Coordinator*

Brendan Kibbee, *Pure Water Stewardship*



Winter scene along Chickley River, a tributary to the Deerfield in West Hawley, MA. Photo by Russell Cohen



## -Watershed Contacts

<b><u>Watershed</u></b>	<b><u>Team Leader</u></b>	<b><u>Phone</u></b>	<b><u>Watershed Association/Contact Name</u></b>	<b><u>Phone</u></b>	<b><u>Riverways Contact</u></b>
Blackstone	Lynne Welsh	508-835-4816	Blackstone River Watershed Association, Al Spittler	508-243-8797	Russ Cohen
Boston Harbor Subbasins: Nepsonset Mystic Weymouth/Weir	Rich Kleiman Kwabena Kyei- Aboagye, Jr.	617-727-9693 617-626-117	Neposet River Watershed Association, Ian Cooke Mystic River Watershed Association, Grace Perez Weir River Watershed Association, Samantha Woods	781-575-0354 781-316-3438	Joan Kimball Maria Van Dusen Joan Kimball
Buzzards Bay	Karl Honkonen	508-946-2775	Buzzards Bay Coalition, Mark Rasmussen West port River Watershed Alliance, Gay Gillespie	508 993-2404 508-636-3016	Joan Kimball
Cape/Islands	Patti Kellogg	508-946-2812			Karen Pelto
Charles	Mike Dibara	617-727-3267	Charles River Watershed Association, Bob Zimmerman	617-965-5975	Rachel Calabro
Chicopee	Paul Lyons	413-323-8998	Chicopee River Watershed Council, Karl Bergman	413-594-4468	Maria Van Dusen
Connecticut	John O'Leary	413-587-9329	Connecticut River Watershed Association, Whitty Sanford & Tom Minor	413-529-9500	Russ Cohen
Deerfield	Chris Duerring	413-773-7899	Deerfield River Watershed Association, Roland Hesselbart	413-337-6659	Maria Van Dusen
Farmington	Mike Parker	413-532-4450	Farmington River Watershed Association, Kevin Case	860-658-4442	Maria Van Dusen
French	John Desmond	508-792-7650			Russ Cohen
Housatonic	Tom O'Brien	413-447-9771	Housatonic Valley Association, Dennis Regan	413-637-3188	Russ Cohen
Hudson	Tom O'Brien	413-447-9771	Hoosic River Watershed Association, Lauren Stevens	413-458-9841	Russ Cohen
Ipswich	Rich Tomczyk	978-661-7817	Ipswich River Watershed Association, Kerry Mackin	978-887-8404	Karen Pelto
Merrimack	Bill Dunn	508-767-2799	Merrimack River Watershed Council, Ralph Goodno	978-681-5777	Maria Van Dusen
Millers	Alice Rojko	508-792-7470	Millers River Watershed Council, Kim Lincoln	978-632-9592	Cindy Del Papa
Narragansett Bay	Andrea Langhauser	508-946-2878	Palmer River Watershed Alliance, Judith Bertozzi Pokanoket River Watershed Association, Carol Faulhaber	508-252-3539 401-245-3036	Cindy Del Papa
Nashua	JoAnne Carr	978-835-4616	Nashua River Watershed Association, Elizabeth Ainsley-Cambell	978-448-0299	Cindy Del Papa
North Coastal	Larry Gil	978-661-7746	Salem Sound 2000, Karen Hopkins Saugus River Watershed Council	978-741-7900 781-233-5046	Maria Van Dusen
Parker	Rich Tomczyk	978-661-7817	Parker River Clean Water Association, Shanna Hallas-Burt	978-462-2551	Karen Pelto
Quinebaug	John Desmond	508-792-7650	Quinebaug Rivers Association, Roger Hunt	508-755-4917	Russ Cohen
Shawsheen	Bill Dunn	508-767-2799	Shawsheen River Watershed Association, Bob Rauseo Shawsheen River Environmental Action Team, Bob LeBoeuf	978-851-9505 978-581-4094	Maria Van Dusen
South Coastal	George Zoto	508-946-2739	North & South River Watershed Association, William Stanton	781-659-8168	Karen Pelto
SuAsCo: Assabet Sudbury Concord	Mike Fleming	978-368-0126	SuAsCo Watershed Association, Peter Burn Organization for the Assabet River (OAR), Julia Blatt Sudbury Valley Trustees, Steve Johnson	617-573-8248 781-369-3956 508-443-7325	Joan Kimball
Taunton	Patrick Rogers	508-946-2836	Taunton River Watershed Alliance, Debbi Edelstein	508-697-5700	Joan Kimball
Ten Mile	Andrea Langhauser	508-946-2878	Ten Mile River Watershed Alliance, Joe Hall	781-377-3576	Rachel Calabro
Westfield	Mike Parker	413-532-4450	Westfield River Watershed Association, Dan Call	413-532-7290	Maria Van Dusen



---

# Urban Rivers Program Update

## Future Vision for Mill Creek

The Urban Rivers Program continues to support the Chelsea Greenspace & Recreation Committee in its project on Mill Creek. The Greenspace Committee has four intertwined goals for Mill Creek:

1. Restore the estuary by slowing and preventing the invasion of phragmites and replacing it with spartina marsh grasses while simultaneously addressing the drainage issues with the abutting federal, state, city and private entities.

2. Make the land along Mill Creek accessible to area residents and businesses as attractive “green” open spaces with walkways, pocket parks, playing fields and canoe access.

3. Enhance the redevelopment of the 38-acre “parkway plaza” by participating in the design process to insure an attractive “greenway” component for new businesses and residents.

4. Work in partnership with the City of Chelsea, parkway plaza owner and neighborhood residents to see that the first three goals are realized; and use local youth and Chelsea residents to assist the process and bring in technical assistance from other partners. (Conservation Law Foundation, the Watershed Institute, the BSC Group, Mass Audubon Society, the Appalachian Mountain Club, MA Riverways/Urban Rivers, the Urban Resources Partnership of Greater Boston, and the Corporate Wetlands Restoration Program).

Mill Creek, the headwaters of the Chelsea River or Creek as it is most frequently called, is an urban estuary that lies between the cities of Chelsea and Revere. Flowing southeast from Route 1/Route 16 interchange for three quarters of a mile before flowing into Chelsea Creek, Mill Creek is bordered by what remains of the salt marshes that once covered the low-lying sections of the City of Chelsea. Even today it provides important habitat to many species of plants and animals.

Mill Creek is bordered by several housing projects for senior citizens and families, an Irish club, a satellite branch of Beth Israel, a small retail store area, single family residences, and a thirty-eight acre neglected underutilized business area ready for re-development in Chelsea. On the Revere side, there is the Route 16/Revere Beach Parkway, the MDC Skating Rink, the historic spice mill building, and the Route 1 interchange at its headwaters.

Unfortunately, Mill Creek is cut off from the residents of Chelsea by buildings and fences along the marsh. Water quality is degraded by stormwater runoff from adjacent roads and parking areas. Residue from past industrial uses may still impact the area. Marsh grasses, spartina, lavender and sea spinach are slowly but continually being overtaken by the tall invasive weed phragmites. These plants make it impossible for other grasses to survive; they block views and have a negative impact on the health of the estuary.

The Mill Creek area is recognized by many in Chelsea to be the last remaining natural open area in the city. Simply by its nature of being an estuary with a tidal stream and adjacent wetlands, it has remained largely unused. Standing on the site of an old landfill

behind the former Burger King location across the stream from the MDC Skating Rink on Route 16, one has a wonderful view of this tidal stream winding down through wetlands and past the breached dam at the historic old spice mill.

The Chelsea Green Space and Recreation Committee is working to insure that this area becomes available to residents for a greenspace where they can walk and enjoy watching the stream and surrounding marshes as the tide comes and goes. The colors of water and marsh change with daily light shifts in the different seasons, it is always changing yet the same. It is a place where one can watch ducks, gulls and egrets in their foraging along the creek.

The Green Space Committee is the catalyst for bringing together the many players in a partnership for Mill Creek Restoration. The Committee is promoting all four goals listed above as a way for long term success and sustainability of the area that will benefit the Mill Creek neighborhoods, new business in the area and the city interests in making this an attractive “gateway” to Chelsea and nearby Boston. The Committee is working with its partners to fund the estuary restoration.

The Green Space Committee is also working in the community with its partners to build awareness of and a common vision for Mill Creek as a wonderful greenspace for the city. It holds neighborhood



*Mill Creek in Chelsea looking toward the city of Revere. Photo by Jody Howard*

meetings, cleanups, canoe days on the river, and bus tours to bring people to the area to see for themselves the potential of Mill Creek restoration in 2000. The Committee makes sure that the City and developer include the neighborhoods as proposals for redevelopment of the area are brought forth. In addition to ongoing partnership support, the Urban Rivers Program has provided a small grant for the visioning process and is supporting interns in the outreach campaign. ●

# Adopt a Stream

## Program Update

### Why Stream Teams?

**WORKING IN COMMUNITIES:** We have heard from folks that working on Stream Teams helps build a sense of community by connecting people to each other, to town officials and to the river. Many Conservation Commissions and Boards of Health report that they appreciate having the results of the Shoreline Surveys. They want to be involved in the Shoreline Survey right from the beginning so that they can help direct the Shoreline Survey and feel a part of the process. Completed Shoreline Survey Reports document the findings of the Shoreline Survey for immediate action and also serve as a permanent record of the group's work.

The Department of Fisheries, Wildlife and Environmental Law Enforcement's "Adopt-A-Stream Award" is a good way to highlight the Stream Team's ongoing work and successes as well as to draw attention to the river or brook. Most of the recent award ceremonies have been at Selectmen's meetings where the Stream Team members have time to briefly describe their work, present their completed report to the town, and the Selectmen have an opportunity to talk about this work. At these meetings, Selectmen consistently say that Stream Teams are a resource for the community. Some Boards of Selectmen have offered assistance to Stream Teams, and several times, the Selectmen have asked Stream Teams to participate in the decision-making process on river issues.

**WORKING WITH WATERSHED TEAMS:** In addition to local achievements, Stream Teams—which have been called the heart of the Watershed Initiative—can help guide watershed work. We encourage Stream Teams and their watershed association colleagues to join Adopt-A-Stream or Riverways Staff and be on the agenda at a Watershed Team meeting. This is an opportunity to share Stream Team work and knowledge about the river. The Watershed Team needs to hear about river issues, successes and what still needs work.

Members of the Watershed Team—state and federal agency staff, watershed associations, representatives of business and municipalities -- have not been on all rivers and may not know about the issues in your town. Your information may help the Watershed Team as it writes its yearly work plan and five year watershed action plan. Watershed Team members may be able to provide some technical assistance to help you on your river issues.

To find out more about the Watershed Initiative and how to contact your Team Leader, go online at [www.state.ma.us/envir](http://www.state.ma.us/envir). EOEA has a new web page with watershed pages.

**WORKING WITH LEGISLATORS:** Legislators and/or their aids provide an important link for the river when they attend Stream Team meetings. Both state and federal representatives and staff have participated in some Stream Team meetings and when they do, they provide a broader perspective as well as insights into solving problems. Legislators report that they also enjoy being invited out on the river for canoe trips, fishing events, canoe races and Shoreline Surveys.

**WORKING WITH DEP:** The federal Clean Water Act requires all states to undertake periodic assessments of their water bodies to determine if they meet assigned water quality standards. In Massachusetts, the DEP takes the lead on the preparation of these required assessments. Over a five-year period, reflecting the Watershed

Initiative cycle, the staff at DEP will write assessments for each of the watersheds in Massachusetts using data gathered by DEP, DEM, DFWLE, and others. DEP does a variety of monitoring including chemical and biological monitoring to determine the status of surface bodies including rivers. They also attempt to ascertain the sources of diminished water quality when a river is assessed as impaired.

In Massachusetts most water bodies not used for drinking water are classified as B, (or SB if it is salt water), known casually as fishable and swimmable. Many of our rivers do not meet their assigned water quality standard. This is particularly true during rainstorms when stormwater runoff contributes nonpoint source pollution to our waterways. The assessments consider whether the water body meets four general designated uses including: **aquatic life** (suitable habitat and water quality for sustaining native and naturally diverse communities of aquatic flora and fauna), **fish consumption** (edible portions of fish or shellfish are safe for human consumption), **contact recreation** suitable for primary contact (swimming) or **secondary contact** (boating), and **aesthetics**.

Other designated uses may include drinking water, agricultural and industrial uses when applicable. Some watersheds have more complete data sets while others have little data. If there is insufficient information, DEP will characterize a section of a river or a water body as unassessed meaning they are unable to determine if the waterway is meeting its assigned water quality standards.

The assessments of each watershed are important because waters not meeting their water quality designation are placed on the 303(d) list of impaired waters. The Clean Water Act has a provision that requires states to address and try to improve their impaired waters. The mechanism for this receiving the most attention lately is the preparation of a Total Maximum Daily Load (TMDL) which would determine the maximum amount of a pollutant(s) a waterway can receive and still meet water quality standards (see related article). An unassessed river will not invoke Clean Water Act mandated actions to work towards its restoration. In summary, information is needed to make an assessment.

Stream Team Shoreline Survey Reports can provide some critical information to the assessment process. Survey Reports can help determine the aesthetic status and help determine whether the aquatic life designated use is met. The Shoreline Survey Reports could also suggest the cause(s) of impairment as well as document stretches of rivers with clean water, no or few apparent problems. Stream Team information may help DEP by increasing their knowledge about a river, (since they have insufficient resources to monitor every river from headwater to mouth) and the possible causes of the problems they do determine.

By increasing DEP's knowledge of the rivers and streams, Stream Team Shoreline Survey reports will increase knowledge of where the problems are, which could lead to

- Plans to restore the river
- Documentation to support applications for grants that could fix problems and improve stream and lake water quality and habitat conditions

DEP staff are also looking to Watershed Teams to ask Stream Teams to read the draft assessments on sections that have been surveyed and to make comments through the Watershed Team to DEP. This year the DEP is working on the Nashua, Blackstone, Chicopee and Connecticut River Watersheds.

**WEB PAGE:** The Adopt-A-Stream Web Page is a resource for DEP, Watershed Teams, townspeople and others to learn about local rivers. In order to make these individual Stream Team pages

more informative, we are asking Stream Teams to check their web page ([www.state.ma.us/dfwele/river/rivaas\\_toc.htm](http://www.state.ma.us/dfwele/river/rivaas_toc.htm)) and make sure that the page includes a description of the river, issues found during the Shoreline Survey, successes, and unmet needs of the river. Several Stream Teams have sent pictures—which brings life to the page. If these parts are not on the Web Page, please send it in to us either electronically ([rachel.calabro@state.ma.us](mailto:rachel.calabro@state.ma.us)) or by mail. We will send the pictures back after we scan them.

**CONGRATULATIONS:** We are encouraged each time we hear about Stream Team work. Often successful beyond belief, sometimes uphill work, each step is making an impact and raising awareness. Don't hesitate to call us with your questions. We love to share news—your successes and your problems—all great learning opportunities for other Stream Teams.

**BUSINESS SPONSORSHIP:** Riverways Program staff proposes the idea of Watershed Associations asking business for \$1-2000 to support Stream Team work. A business could sponsor a Stream Team in the same way that they sponsor Little Leagues and other sport teams. This provides business with an opportunity to be more involved in their communities. It also allows them to receive recognition of their commitment to the river and the environment. This money could allow Watershed Associations to hire a full time or part time coordinator/liaison to support Stream Team Work. Let us know about any Watershed Association or Stream Team who is doing this or would like our help. Please call the Riverways/Adopt-A-Stream office 617-626-1544. ●



## Stream Team Snapshots

(Reprinted from the *Stream Advocate*, the Adopt-A-Stream Newsletter)

Across the state Stream Teams are working to protect land and habitat, restore water quality, create partnerships and educate their neighbors about rivers.

**Blackstone River Watershed:** The **Miscoe Brook Stream Team** is spearheading the nomination of Miscoe Brook as an Area of Critical Environmental Concern (ACEC), one of the goals in its Action Plan. The Action Plan is included as part of the nomination package. The Shoreline Survey and resulting publicity served to raise the awareness in Grafton of the importance of actions to protect this 4,000 acre, mostly undeveloped ecological system. Their awareness campaign included sending a Miscoe Brook Guide to all 500+ residents, sampling water quality, and working with landowners to protect land. In addition, the Stream Team assisted with the Hennessy land protection effort.

**Charles River Watershed:** The **Cutler Park to Commonwealth Avenue Protection Group**, the **Nonasties**, is completing its 501 C-3 application to become a nonprofit organization. To learn

more about this Stream Team, go to the Adopt-A-Stream web page and take the link to the Stream Team Web Page.

Roger Frymire, a volunteer from the 1995 lower Charles Shoreline Survey effort, recently completed a Pipe Alert Report based on a monitoring program (Charles River Watershed Association and boat houses) that identified 16 pipes that flow with enough sewage to become health hazards in the immediate vicinity of their outfalls. According to the report, "the outfalls passed the triple test: They Look like sewage, Smell like sewage, Test like sewage." As one of the outcomes of this study, Roger proposes that BioHazard signs be placed next to the outfalls.

**Housatonic River Watershed:** The **East Branch Stream Team** reports that after they discovered storm water entering the ponds leading into the East Branch, the Housatonic Valley Association and the Berkshire County Regional Planning Commission submitted a grant proposal for a study that will lead to the mitigation of this problem. Although we haven't heard whether they received the grant, the proposal shows the importance of partnership and working together to solve these more technical issues.

**Ipswich River Watershed:** The **Reading/North Reading Stream Team** received an "Environmental Leadership Award" for its impressive and diverse accomplishments from the Ipswich River Watershed Association. One of its recent actions was to propose inclusion of 6 sites (the dirty half dozen) in North Reading on the Toxics Action Center's Dirty Dozen sites. TAC has listed the "dirty half dozen sites" on its top 12 listing. In addition, the Stream Team has filed with DEP to have the "dirty half dozen" become a "Public Involvement Project". There is now opportunity for public input in the clean up of these sites. The **Headwaters Stream Team** in Wilmington is also working on two 21E sites and is planning to have them become public Involvement projects. The **Ipswich Stream Snapshots continued**

**Team** is constructing a boardwalk behind the YMCA on a marsh to encourage understanding of the ecosystem and connection to the river. They are also working with businesses to encourage citizens not to feed ducks on business property.

**Merrimack River Watershed:** Congratulations to the Friends of the Powow River, a former Stream Team, that has just become the **Powow River Watershed Association**.

**Mt. Hope Bay: Cole and Lee Rivers – River Aware.** Another partnership brought about a Shoreline Survey on the Cole and Lee Rivers. Partners included the EOEa Watershed Team Leader, Andrea Langhauser, EOEa intern, Ryan McGorty, town officials from Swansea and Somerset, residents of both communities and state legislators. Senator (then Representative) Joan Menard participated in the Shoreline Survey, and Representative Phil Travis participated in the Action planning meeting. In addition, Congressman McGovern's legislative aide came to the Shoreline Survey training workshop. Results of the Shoreline Survey include: sending a letter to MA Highway urging reconstruction of the Route 103 Bridge to solve the tidal constriction caused by the current bridge structure; sharing results with town Board of Health confirming that problem pipes identified by the Division of Marine Fisheries still require immediate remediation; and creating a plan to bring all partners together at a Water Quality Forum for the towns.

**Nashua River Watershed:** Working with Al Futterman, NRWA, two new urban Stream Teams in the Nashua Watershed have completed their Shoreline Surveys and Action Plans. The **Fitchburg Stream Team** is sharing its Action Plan with committees in Fitchburg that are planning for the future to make sure that the river is seen as a focal point for this "City on the River." The **Clinton**  
*Continues, next page*

**Stream Team** is sharing its action plan with the Open Space Planning Committee. To see pictures and a narrative of a section of the Clinton Stream Teams Shoreline Survey, go to [www.srwd.com/nashua](http://www.srwd.com/nashua), or see the link from the Adopt-A-Stream web page.

**Neponset River Watershed:** Tom Palmer, co-chair of the **Friends of the Neponset Estuary**, has been involved in many an issue since the Shoreline Survey in 1994. The Friends have many successes including working with the MA Highway Department to change its redesign of a bridge to protect anadromous fish, habitat surveys, tours, and citizen awareness. One of the projects that Tom has worked long and hard on is the uphill struggle to protect a wetland and a stopover site for migratory and nesting birds on Marina Bay. For more information about this work, see his web page <http://people.ne.mediaone.net/ophis/space.htm>.

**SuAsCo Rivers Watershed: SWAMP** –the Sudbury River Watershed Monitoring and Protection Group - received an Adopt-A-Stream Award at a recent Southborough Selectmen's meeting. Attendees included Mike Fleming, EOEa Watershed Team Leader, and Nancy Bryant, SuAsCo Coalition Director. Stream Team members brought the August drought and dry riverbed to the selectmen's attention and described actions of the Stream Team. The Selectmen responded by congratulating the group and saying "volunteers can sometimes do more than elected boards."

**SWAMP** also attended a recent SuAsCo Watershed Team Meeting. The Watershed Team was treated to slides of the upper Sudbury taken by Stream Team member, Frank Gohlke, well-known fine

arts photographer. Organizing their presentation around topics including: (1) issues on the river; (2) Stream Team accomplishments; and (3) the rivers unmet needs, they brought this section of the river to life for the Watershed Team. Most of the Watershed Team members had not been to this section of the river and expressed appreciation to the Stream Team for sharing insights that will help the Watershed Team with its planning. The Stream Team said that they made good contacts with the agency staff and with the watershed associations at the meeting.

**CREST** – After the Concord River Environmental Stream Team identified an illegally breached beaver dam in Billerica that resulted in thousands of dead fish and other organisms, members worked tirelessly to bring the problem to appropriate town and state officials so that some remediation could take place and to prevent similar environmental violations. In response, an Environmental Law Enforcement Officer investigated the situation. The Stream Team is working with the town to make sure that this will not happen again.

**Westfield River Watershed:** A new Stream Team was formed in Huntington to do a Shoreline Survey both as a planning tool and in response to interest in extending the Wild and Scenic Designation of the Westfield River. Shoreline Surveyors found a beautiful river with many amenities and assets that they wish to protect. Next steps include work to protect land, share information with the Open Space Committee, and work on Wild and Scenic River Designation. ●

---

## MDFA AND FARMERS WORK TO IMPROVE WATER QUALITY

The Massachusetts Department of Food and Agriculture (MDFA) has expanded its assistance to farmers in addressing environmental issues on their farms through a new program called the Agricultural Environmental Enhancement Program (AEEP). The goal of the program is to encourage farmers to manage their natural resources through proper planning and installation of appropriate best management practices. To meet this goal, MDFA offers farmers both educational and financial assistance and provides linkages with technical assistance providers such as the USDA-Natural Resources Conservation Service.

Through funds allocated from the Rivers Protection Act, MDFA is working with farmers to install practices that improve water quality in rivers and streams covered by the Act. \$1 million is being awarded over five years through an RFR process to farmers who want to address potential non-point source pollution issues on their farms. In Fiscal Year 1999, the program's first year, \$200,000 was distributed to 30 farmers in 12 different watersheds across the state. The funds were used to purchase materials; farmers are responsible for installation and long-term maintenance of the practice. Examples of projects funded include fencing to keep livestock out of wetlands, roof gutters on dairy barns and installation of a grass filter strip, cement for manure storage areas, flumes and pumps as part of tailwater recovery systems, drainage pipe and gravel to control surface water runoff and pesticide storage sheds.

The overwhelmingly positive response from farmers to the program in FY99 allowed DFA to expand the program in FY00 to \$350,000. Decisions are presently being made for allocating these funds. The criteria include the location of the farm in relationship to a critical water resource and the extent to which the requested practice addresses the potential pollution issue.

MDFA also offers farmers an opportunity to dispose of unused, unwanted, banned or cancelled pesticides and to recycle pesticide storage containers through a series of programs offered throughout the year.

For more information, contact Susan Phinney, Coordinator, at 617-626-1772 or [susan.phinney@state.ma.us](mailto:susan.phinney@state.ma.us). ●



*Dairy farm in Essex County: existing livestock fence will be moved thirty-five feet away from wetland boundary.  
Photo by Susan Phinney*

## Flow Forum is Catalyst for Connections

The **Instream Flow Workshop** on January 19, 2000 was a huge success. The one-day event in Concord NH was co-sponsored by the Northeast Chapter of the River Management Society (RMS) and the Northeast Watershed Roundtable. There was standing room only as 150 people participated in this interactive workshop held at the Department of Environmental Services building in Concord, NH. The day couldn't have happened without the support and assistance of the National Park Service, The Nature Conservancy, and the NH Department of Environmental Services. Special thanks also to the strong support of Karen Pelto of the Massachusetts Riverways Program and the outstanding efforts of Rebecca Waugh, instream flow forum intern.

Following a greeting by Jim MacCartney, NH Rivers Coordinator and VP of the Northeast Chapter, Brian Richter, the Director of the Freshwater Initiative of The Nature Conservancy, gave the keynote address. His talk, "Ecologically Sustainable Water Management: Managing River Flows for Biodiversity," stressed the protection and restoration of rivers to support entire ecosystems rather than single target species. He discussed the need to work within existing constraints of water uses and use demand management to restore some of the natural variability in flow rather than relying on minimum or target discharges.

Several technical presentations on instream flow followed. Gary Whelan of the Michigan Department of Natural Resources gave a talk entitled "Maintaining River Connectivity and Why Fish Need to Move." In addition to dams, other barriers to fish passage include culverts, poor water quality, and dewatered channels. Gary described how fish move to maximize production in their efforts to feed, find refuge, reproduce, and grow. River systems need fish to redistribute "biological energy" to the headwaters and maintain ecosystem health and viability.

Dave Armstrong of the US Geological Survey gave an interesting talk on the highly utilized Ipswich River watershed in Massachusetts. A public water supply for 330,000 people, parts of the headwaters have gone dry near areas of intense groundwater pumping. During the drought of the summer of 1999, many reaches of the river ran dry. In efforts to restore the river to a sustainable ecosystem, Dave described the study that was undertaken to characterize the river. Questions to be answered include the "original" state of the river (prior to colonialization), what fish species might inhabit the area, and the current ecosystem quality.

David Halliwell of the Maine Department of Environmental Protection gave a presentation entitled "Cold Water Fishery Needs: Instream Flow Issues in Highly Regulated Rivers." His talk described work that he conducted for Trout Unlimited in the scientific review of FERC relicensing of peaking hydropower facilities. He described the stream flow assessment method that was used which provided cost effective, reproducible results with minimal field-work.

Piotr Parasiewicz of Cornell University gave a presentation "State of the Art in Quantitative Instream Flow Assessment." He described how physical conditions in the river as well as biological requirements of the plants and animals combine to describe the habitat quality. Hydraulic modeling has advanced greatly but we must properly characterize the river by an intensive measurement program. Piotr described sampling equipment that allowed collection of massive amounts of data relatively quickly and reviewed a study of habitat quality for a river in Austria.

Mark Bain of Cornell University rounded out the technical presentations with "Approaches to Setting Statewide Instream

Flow Standards." He presented the average relationships between river discharge, width, depth, and velocity and how these variables change along a river. He showed that for the Northeast US, the average annual discharge is equal to approximately 12% of bankfull or channel forming discharge. He then discussed the effects of depth on biodiversity. He concluded with a plug for the new book "Aquatic Habitat Assessment" which can be downloaded for free from the web at: [www.fisheries.org/publications/bookpdf/aquaticmethods.pdf](http://www.fisheries.org/publications/bookpdf/aquaticmethods.pdf)

Four moderated working sessions allowed participants to discuss a variety of important instream flow issues during the afternoon. Session A was titled "Interbasin transfers and loss of recharge: effects on rivers and users." Included in discussions were current and proposed regulations for groundwater and surface water uses.

Session B was titled "The role of non-profits, volunteers, and university researchers in gathering data to answer questions for biologists and regulators" and included discussion of appropriate methods and how field surveys and observations are used in the decision-making process.

Session C discussed "grandfathered" uses and how they should be addressed on stressed rivers or in times of drought. Session D dealt with water quality standards, the 303(d) list, and Total Maximum Daily Loads (TMDL) and how these can be used to protect instream flow.

### Making New Connections Work

The Northeast RMS Chapter Officers and other members of the Forum Steering Committee are currently digesting the results of the afternoon discussion groups so we can provide a written summary of the issues discussed. One of the options for future directions that we may take include another workshop focusing on policy issues, such as how instream flow regulations differ among the New England States. Another is a list serve for sharing questions and answers around instream flow issues. Rebecca Waugh will continue to assist in the follow up. Send her any suggestions that you may have to [rebeccawaugh@hotmail.com](mailto:rebeccawaugh@hotmail.com) or give Karen Pelto or Maria Van Dusen a call at 617-626-1540. Also take advantage of the Instream Flow Council's web page: [www.instreamflowcouncil.org](http://www.instreamflowcouncil.org)

## Join in Biodiversity Days

The Executive Office of Environmental Affairs, along with many non-profit and agency partners, is sponsoring the nation's first citizen Biodiversity Days June 9-11, 2000. School children and citizen amateur naturalists will be challenged to find a minimum of 100 species combined of flora and fauna in their towns. This event will be a catalyst for the creation of Local Species and Habitat Registries. We are looking for volunteers to help with these, including Town Organizers, School Organizers, and Group Leaders to take citizens into the field. If you are interested, please call Peter Alden at 617-727-5227 x301 or contact him by e-mail at [peter.alden@state.ma.us](mailto:peter.alden@state.ma.us).

# Understanding Total Maximum Daily Loads

The comment period for an important proposed rule, revising the "Water Quality Planning and Management Regulation" 40 CFR Part 130, ended on 20 January, 2000. This is an important revision because it will have ramifications on U.S. waterways failing to meet water quality standards. This translates to over half of the river miles assessed in Massachusetts and nearly as high a percentage of lakes and ponds.

The proposed revisions deal specifically with a strategy known as the Total Maximum Daily Load or TMDL Program. The TMDL requirement was created under the Clean Water Act to protect public health, achieve clean water, and ensure healthy watersheds. Unfortunately, it took a series of lawsuits across the country to bring this requirement to the forefront. The intent of the program is to establish the maximum amount of a pollutant that may be discharged into a receiving water without water quality standards infractions.

The TMDL Program is complex with many nuances, (the proposed revisions published in the federal register had 40 plus pages of text) which can not be realistically explained in a short article. Briefly, the TMDL program centers on water bodies failing to meet their assigned water quality standard and tries to determine which pollutant(s) must be reduced to bring a waterway into compliance with the standards. A TMDL is a written plan and analysis of the offending pollutant(s) intent on achieving water quality standards for an existing, degraded waterway.

A TMDL compares the relative contributions of pollutants sources, both point sources such as a wastewater treatment facility and nonpoint sources such as atmospheric deposition and storm water runoff, and develops a strategy, schedule, and implementation actions which will improve water quality. The TMDL must examine the technical and economic issues and realities to determine how to move from a pollutant load above the assimilation capacity of the waterway to a level below the maximum daily load the water.

The process of establishing a TMDL is outlined in section 303d of the Clean Water Act, (CWA). First, a state must create a comprehensive list of water bodies impaired by pollutants (residues, wastes, materials, etc.) and pollution (human-induced "alteration of the chemical, physical, biological, and radiological integrity of water"). This list of impaired waters includes all water bodies: lakes, rivers, streams, reservoirs, and coastal waters and must consider "all existing and readily available data and information," to assess whether a water body is impaired by pollution or pollutants.

This comprehensive list is usually called the 303d List of impaired waters, (after section 303d of the Clean Water Act). The 303d List has four parts:

- ☞ waters impaired or threatened by pollutants or by unknown causes.
- ☞ waters impaired or threatened by pollution.
- ☞ waters with an EPA approved/established TMDL but still not meeting water quality standards
- ☞ waters which are expected to meet standards by the next listing cycle.

The most important aspect of this four-part list is that only the first part, those waters impaired or threatened by **pollutants** need a TMDL done. A water impaired by pollution (an alteration such as channelization or diversions) would not need a TMDL.

Fortunately, the proposed rule has made great headway in increasing public participation in both the listing process to get all degraded waters onto the 303d List and in creating a TMDL. The methods used to evaluate data and determine the methodology for listing must include public participation. The waters on the 303d List must also be assessed for high, medium or low priority.

Waters used as a source of drinking water, waters with endangered species or sensitive aquatic species all warrant high priority for TMDL development. Also waters that are threatened (suspected of failing to meet water quality standards by the next round of listing) will be included in the 303d List and subject to the preparation of a TMDL.

The TMDL Program in each of the states will be phased in over several years beginning with those waters determined to be high priority. The EPA has ten components required in a TMDL, but the actual mechanics of TMDLs are not prescribed so there will be variability across the country. The TMDL Program has also raised other questions. To some, the idea of determining how much a river or pond can be polluted is nonsensical. Others believe there is concern that the easier point sources of pollution will be the targets of efforts to reduce pollutant loads because of the difficulty of addressing atmospheric deposition or nonpoint sources of pollutants. Still, TMDLs are currently one of the major tools river advocates have for beginning to reverse the degradation of impaired waters.

Information about the TMDL Program is available on the EPA web page ([www.epa.gov](http://www.epa.gov)), and the 303d List is available from DEP. You can also call Riverways and we will try to assist you (617/626-1545).

## New Division of Marine Fisheries Director Appointed

Commissioner David Peters announced that Paul Diodati will serve as the next Director of the Massachusetts Division of Marine Fisheries (DMF). Mr. Diodati's appointment was approved by a unanimous vote of the Massachusetts Marine Fisheries Commission. Diodati has been employed as a senior fisheries biologist by the Division of Marine Fisheries since 1981, and has served as the Sport Fish Program Director since 1995. He has also been Acting Assistant Director of Research for the DMF for the last six months.

As Sport Fish Program Director, he led efforts to maintain and enhance the Commonwealth's anadromous fishery resources and oversaw surveys and research projects needed for fisheries management. Diodati led the evaluation of potential impacts on marine resources, habitat and fisheries from industrial and residential development, oil or toxic waste spills and other factors. He is well known for his work with the Gulf of Maine northern shrimp and Atlantic striped bass stocks.

David Peters, Commissioner of the Department, said "Paul is an exceptional fisheries management professional and I am confident that he will do an outstanding job in leading Massachusetts' fisheries conservation and management efforts."

---

---

# Legislative Updates

---

---

## Federal Legislative Update

The **Conservation and Reinvestment Acts (CARA)** [S. 25 in the Senate and H. 701 in the House] passed the House Resources Committee on November 10 by a 37 to 12 vote following negotiations and compromises drafted by Committee Chairman Don Young (R-AK) and Ranking Minority Member George Miller (D-CA). CARA seeks to utilize a portion of offshore drilling and gas revenues to provide permanent funding to states for:

- Wildlife conservation and research,
- Conservation education and related wildlife recreation,
- Land and Water Conservation Fund,
- Urban Parks Program,
- Coastal protection and impact mitigation,
- Historic preservation.

In Massachusetts, the estimate for the wildlife portion alone could be about \$6 million annually, providing both biological and economic benefits to the state. As much as \$41 million is expected to come to the state under the other CARA programs. Supporters of the bill are working to increase the number of Congressional cosponsors of the bill, and Representatives John Olver, Barney Frank and Bill Delahunt have agreed to cosponsor the bill from Massachusetts. The full House is expected to vote on the bill as early as April 2000.

Americans for our Heritage and Recreation and Teaming with Wildlife strongly encourage citizens to contact their Congressional representatives to urge them to push for a full House vote in early spring. For additional information, contact Jennifer Soper at the EOE Division of Conservation Services [(617) 626-1015], Marion Larson at the Mass. Division of Fisheries and Wildlife [(508) 792-7270 ext.111], or Eric Antebi at the Appalachian Mountain Club [(617) 523-0655].

## State Legislative Update

Over 600 people stood in the State House's Great Hall last December to celebrate community preservation and to support the Community Preservation Act. The **Community Preservation Act (CPA)**, currently numbered Senate Bill 1988 is still in the six-member conference committee that will draft the final version of the bill and we hope to see it in the very near future. This is the current version of statewide "land bank" enabling legislation that has been under consideration at the State House for more than a decade. The CPA would bestow upon cities and towns a powerful tool to help fight sprawl and shape their destinies by providing a local funding source for open space protection, historic preservation and affordable housing. It is estimated that up to \$190 million could be raised annually from full community participation in the CPA. Contact the Community Preservation Coalition at (617) 725-0597 for up-to-date information and advice on how best to make your voice heard on this important legislation.

The **Sustainable Development Act** (H. 3135 and/or H.4095), sponsored by Rep. Douglas Petersen, is currently before the House Ways and Means Committee. The bill encourages communities to plan by providing funding and technical assistance. Plans will need to include goals and policies, specific elements including a natural resources inventory and watershed resources element, and an

implementation element, i.e., what regulations and bylaws will need to be changed to implement the plan.

Regional Planning Agencies (RPAs) will be responsible for developing regional policy plans that contain same elements as local plans with the option of including "desirable optional elements". Municipalities with approved plans will get prioritization for certain (yet to be determined) state grants. For more information, contact Nancy Goodman at the Environmental League of Massachusetts at (617) 742-2553.

The **Old Growth Forest Protection Bill** (S. 988), co-sponsored by Senator Andrea F. Nucciforo and Rep. Steven Kulik, would direct the Executive Office of Environmental Affairs to establish Old-Growth Forest Reserves within publicly owned land. This bill is currently before the House Ways and Means Committee. The purpose of this legislation is to give additional protection to the relatively few small and scattered old-growth forest remnants in Massachusetts, plus establish old growth reserves over a greater range of locations, slopes and soil types than is currently the case. This legislation would provide a valuable and compatible counterpart to the active forest management taking place on most of the state's other public and private forestlands. For more information, contact Heidi Roddis (Mass. Audubon) at (781) 259-9500 ext. 7260.

The **Water Resources Conservation and Efficiency Act** was unanimously approved by the Natural Resources Committee last year. It is now before the House Ways and Means Committee. This bill (S. 1042 and H. 3124) would strengthen state and local water use efficiency/conservation programs, with a special initial focus on the stressed Ipswich River watershed. The bill also provides funding for research to determine the streamflows/water levels necessary to maintain healthy aquatic and other water-dependent organisms and ecosystems.

Massachusetts Audubon Society is assembling a portfolio of photos and newspaper articles chronicling the problems with low flow and groundwater drawdown to share with Committee members. If anyone has photos or copies of articles to share from watersheds around the state, please call Lou Wagner at Mass. Audubon [(781) 259-9500]. You can also contact Kerry Mackin of the Ipswich River Watershed Assoc. [(978) 887-8404] for additional information and advice on how best to make your views heard on this important legislation.

The State Legislature is studying possible establishment of **Technical Assistance Centers** in each of the state's Regional Planning Districts. This measure was introduced by Representative Brian Dempsey of Haverhill with assistance from the Merrimack Valley Planning Commission. These centers would aid communities in the fields of management, data, environment, transportation and community development through technical assistance and financial help. The bill would provide \$150,000 annually to each regional planning district.

Barbara Gardner is proposing House Bill #2566, the **Open Space Acquisition Revolving Fund**. A new section in Chapter 21 would authorize the Department of Environmental Management to administer a program of zero interest loans to cities and towns for acquisition of open space. Cities and towns would be able to repay loans in 20 annual installments. This bill would be established as Section 2PP of Chapter 29 of the Massachusetts General Laws. For information contact Jim Hunt, Massachusetts Executive Office of Environmental Affairs at (617) 727-9800. This bill is currently in the House Ways and Means Committee. ●



# Resources & Grants

## Grants

Secretary Bob Durand and Commissioner Peter Webber announce the availability of \$250,000 for **Mass ReLeaf tree-planting grants** this spring. In response to requests from communities made over the past couple of years, the legislature made and Governor Cellucci approved this one-time appropriation of capital funds for fiscal year 2000. Grants up to \$5,000 will be available to both municipalities and non-profits for the purchase of trees to be planted on public lands. Communities must provide labor to plant the trees and demonstrate the ability to properly maintain them. In addition to street and park plantings traditionally supported by Mass ReLeaf, proposals for watershed and ecosystem restoration projects are also invited. Applications are due March 16. Contact Pat Dickhaut at 617-626-1459 or go to <[www.state.ma.us/dem/grants/](http://www.state.ma.us/dem/grants/)>.

**River Network** has recently published its 1999-2000 directory of funding sources for riverine protection and/or restoration activities in the northeast U.S. A limited number of copies of this document are available via the **Mass. Watershed Coalition** [(508) 534-0379, <<http://www.ultranet.com/~mwc/>>], one of the contributors to the project. The directory is also posted at River Network's Web site <<http://www.rivernetwork.org>>.

The National Library for the Environment's Web page <<http://www.cnie.org/foundations.htm>> contains a nice listing of over 100 foundations providing grants for environmental purposes, with a hot link to each foundation's individual Web page, plus a link to the Environmental Grantmaking Foundations directory webpage, providing additional information on these and other foundations.

Matching grants for wetlands restoration, acquisition, or enhancement are available through the **North American Wetlands Conservation Act** that is administered by the US Fish and Wildlife Service. Proposal deadlines are March 31 and July 20, 2000. Click on Grants at URL: [www.fws.gov](http://www.fws.gov).

## Services

One of the free services the Maryland-based **Community and Environmental Defense Services** [CEDS, (800) 773-4571] offers to citizens is a review of site plans for housing projects, shopping centers, and other development proposals. CEDS will spend up to an hour going over the plans to identify potential impacts and possible solutions.

CEDS can also do an initial no-cost review of plans for a community, region or watershed, looking for opportunities to apply the latest Smart Growth/Sustainable Development techniques. Publications for preserving neighborhoods and the environment from the impact of poorly-planned growth can also be downloaded for free from the CEDS website <<http://www.ceds.org/>>.

## On-line Resources

There are several new on-line resources available at the **USEPA's Office of Wetlands, Oceans and Watersheds (OWOW)** website. The Center for Watershed Protection's "The Eight Tools of Watershed Protection", containing all the text and graphics of Chapter 2 of the "Rapid Watershed Planning Handbook", by Tom Schueler, is posted at <<http://www.epa.gov/owow/watershed/academy/acad2000>> under "What's New". (The eight tools discussed are watershed planning, land conservation, aquatic buffers, better site design, erosion and sediment control, stormwater best management practices, non-stormwater discharges and watershed stewardship programs.)

On a related topic, the **Nonpoint Source Control Branch** has developed an on-line reference tool for local government officials and others to help them craft **local ordinances and by-laws for water quality protection**. The site <<http://www.epa.gov/owow/nps/ordinance/>> offers both model and real-life examples of ordinances that address aquatic buffers, erosion and sediment control, open space development, stormwater, illicit discharges, post-construction runoff control, and related topics, along with links to other helpful Web pages. This website should be useful to municipalities covered under **Phase II of the NPDES Stormwater Program** <<http://www.epa.gov/owm/sw/phase2>>.

Also on-line <[http://www.usda.gov/stream\\_restoration](http://www.usda.gov/stream_restoration)> is a complete downloadable (in PDF) version of *Stream Corridor Restoration: Principles, Processes and Practices*. Produced by the Federal Interagency Stream Restoration Working Group in the fall of 1998, this comprehensive reference work is designed for use by citizens as well as government officials and others engaged in activities affecting stream corridors. (The Riverways office has two copies of this document in printed form which you are welcome to peruse "off-line" if you prefer.)

It is now possible to **renew automobile registrations** (license plates) via the Mass. Registry of Motor Vehicles website <<http://www.state.ma.us/rmv/express/plates.htm>>. If you haven't already, why not consider switching to an **environmental plate** when your next registration renewal becomes due? Proceeds from the "Right Whale", "Fish and Wildlife" and "Blackstone Valley" special plates all go to the **Massachusetts Environmental Trust**, a major source of funding for water quality improvement and related projects throughout the Commonwealth. Environmental plates are also available at most Registry offices.

**Massachusetts Water Watch Partnership (MassWWP)** <<http://www.umass.edu/tei/mwwp>>

The Mass. Water Watch Partnership provides training and other technical assistance to citizen organizations conducting water quality monitoring programs on Massachusetts waterways. The MassWWP website has links to groups engaged in water quality monitoring throughout the state, publications on and sources of funding for water quality monitoring, sampling protocols, and much more. Those without access to the Web can access MassWWP by contacting Marie-Françoise Walk at (413) 545-5531 or <[mfwalk@tei.umass.edu](mailto:mfwalk@tei.umass.edu)>.

## Non-governmental on-line resources

**American Planning Association, Mass. Chapter (APA)** <<http://www.massapa.org>>

This website provides information on land use planning activities in communities throughout the state as well as current and proposed planning-related policy, programs and legislation. Also posted here is a schedule of upcoming programs sponsored by the **Mass. Citizen Planner Training Collaborative** <<http://www.umass.edu/masscptc>>, whose mission is to "empower local officials serving on Planning Boards and Zoning Boards of Appeals to make effective and judicious decisions regarding development, transportation, natural resources and the environment by providing them with educational opportunities, access to information and resources and by encouraging the cooperation and integration of land use boards within local government".

**American Rivers** <[www.amrivers.org](http://www.amrivers.org)>, **Friends of the Earth** <[www.foe.org](http://www.foe.org)>, and **Trout Unlimited** <[www.tu.org](http://www.tu.org)> recently announced the collaborative publication by the organizations of *Dam Removal Success Stories: Restoring Rivers Through Selective Removal of Dams That Don't Make Sense*. The report documents more than 465 dams

that have been removed across the country, and includes 25 detailed case studies of dam removal success stories. The most comprehensive review to date of the history and benefits of dam removal in the United States, the entire report can be downloaded via any of the above-mentioned websites (a printed version is available by contacting Elizabeth Maclin at (202) 347-7550 or <emaclin@amrivers.org>.)

**Arnold Arboretum's Institute for Cultural Landscape Studies** <<http://www.icls.harvard.edu>>

Aimed at an audience of citizens, professionals, scholars and students in the fields of historic preservation, natural areas conservation and land use planning, the initial topics selected for this forum are changing approaches to cultural landscapes, public-private partnerships and geographic information systems (GIS).

**Cats Indoors! The Campaign for Safer Birds and Cats** <<http://www.abcbirds.org/catindoo.htm>>

The habitat value of naturally-vegetated riparian corridors and other natural areas can be significantly degraded by cats and dogs encroaching from adjacent residential areas. A project of the American Bird Conservancy [(888) 247-3624], Cats Indoors! was initiated to end the unnecessary suffering and death of birds and other wildlife caused by free-roaming domestic cats. Educational materials developed for Cats Indoors! include a four-color brochure, and newly-developed teachers' guide, and ten fact sheets (also downloadable via their website). For more information, such as educational kits, posters, etc., contact Linda Winter at <[lwinter@abcbirds.org](mailto:lwinter@abcbirds.org)>.

**Conservation/Geography** <<http://www.esri.com/conservation>>

This new website provides information on hundreds of organizations using geographic information systems (GIS) to protect nature and promote social justice. Information regarding grant programs for GIS systems is available by sending a blank e-mail message to <[ecpgrant@esri.com](mailto:ecpgrant@esri.com)>.

**Conservation Law Foundation (CLF)**

<<http://www.clf.org/pubs/nowater.htm>>

The leading nonprofit environmental law firm for New England, CLF also engages in research and has prepared a number of publications on environmental topics of regional interest. The above URL will direct you to an on-line copy of *No Water to Spare*, a report CLF prepared several years ago to address the adverse impacts water withdrawals for snowmaking and other purposes can have on streams and other aquatic ecosystems.

**Conway School of Landscape Design (CSLD)** <<http://www.csld.edu>>

Located in Conway, MA, CSLD offers a one-year degree program in landscape design as well as lectures and workshops on that and related subjects. CSLD students and faculty take on real-life landscape design/environmental projects in Massachusetts and beyond as part of the school's curriculum.

**EarthForce** <<http://www.earthforce.org>>

Based in the metro D.C. area, Earth Force is a national nonprofit organization seeking to engage youth in implementing lasting solutions to environmental issues in their community, developing life-long habits of active citizenship and environmental stewardship in the process. GREEN (the **Global Rivers Environmental Education Network**) is now part of the Earth Force family of programs. GREEN manuals and action guides for educators and students on water quality monitoring and watershed protection are now available at <<http://www.earthforce.org/green/catalog>>. For more information on training programs, send an e-mail to <[green@earthforce.org](mailto:green@earthforce.org)>.

**National Center for Nonprofit Boards (NCNB)** <<http://www.ncnb.org>>

NCNB's [(202) 452-6262] mission is to improve the effectiveness of nonprofit organizations by strengthening their governing boards. NCNB's web site contains an on-line version of its *Board Member* newsletter and its catalog of books, videos and other resources designed to promote better boards and the organizations they serve.

**National Wildlife Federation's Northeast Natural Resource Center**

<<http://www.nwf.org/northeast/watersheds/>>

This URL will lead you to a user-friendly, on-line version of a NWF publication entitled *Saving Our Watersheds: A Field Guide to Watershed Restoration Using TMDLs*. On a similar note, "Getting Started" is an 86-page document intended to serve as an introduction to the science, policy and societal elements of the **TMDL (Total Maximum Daily Load)** program. Its author is environmental scientist and TMDL expert Dr. Wesley Jarrell, a professor of environmental science for over two decades and now in private practice and on the adjunct faculty at the Oregon Graduate Institute. To download the paper, go to <<http://www.ysi.com>>, then click on "Environmental."

**Natural Capitalism**

<<http://www.naturalcapitalism.org>>

This is the title of a new book written by Paul Hawken and Amory and Hunter Lovins of the Rocky Mountain Institute. The book

explains the essential role "natural capital" and ecosystem services - air and water purification, climatic stabilization, waste detoxification and so on - play in economic activity and indeed all life, and how forward-thinking businesses are improving their bottom lines through reducing waste and increasing the productivity of natural capital. The entire book is downloadable at this website, along with links to related events and resources.

**New England Interstate Water Pollution Control Commission (NEIWPCC)**

<<http://www.neiwpcc.org>>

Established by the U.S. Congress way back in 1947, NEIWPCC's mission is to coordinate pollution control and other environmental activities of New York State and the six New England states. NEIWPCC's home page features links to its training courses, its environmental information catalog, and free publications such as *Water Connection* and *L.U.S.T. Line* (a national bulletin about leaking underground storage tanks).

**Nonprofit Risk Management Center**

<<http://www.nonprofitrisk.org>>

Resources at this website include *Riskfacts*, a library of informative 3-4 page briefs that answer frequently-asked questions on nonprofit organization liability, insurance and related topics, and the *Community Risk Management and Insurance* newsletter, offered free to qualifying nonprofit organizations.

**Preserving Family Lands**

<<http://www.stevesmall.com>>

Besides offering a convenient on-line means to purchase *Preserving Family Lands, Book I: Essential Tax Strategies for the Landowner*, and *Book II: More Planning Strategies for the Future*, this website provides a rudimentary "landowner quiz" in which a landowner can confidentially supply his or her net worth and the value of his/her land holdings and get a quick estimate on their potential estate tax liability (and the risk that treasured family lands will have to be sold off to pay the estate tax). The site also provides information on a recent change to federal tax law (§2031(c) of the Internal Revenue Code) that facilitates voluntary land protection by private landowners.

**Save Our Streams (SOS)**

<<http://www.iwla.org/SOS>>

A program of the Izaak Walton League of America, Save Our Streams [(800) BUG-IWLA, <[sos@iwla.org](mailto:sos@iwla.org)>], now celebrating its 30th anniversary, has been a pioneer in grassroots-based river conservation. Resources at SOS's Web page include Stream

Doctor, a nationwide stream restoration program and database, and an on-line macroinvertebrate identification key.

#### Trust for Public Land (TPL)

<<http://www.tpl.org>>

Recently-posted information to TPL's website includes an update on Connecticut's open space protection campaign, edible schoolyards, "Building Green Infrastructure", using land conservation to preserve water quality, and TPL's "Greenprint Gallery", recognizing the successful efforts of six states and Providence, RI in using strategic land conservation to guide growth, preserve livability and prevent urban sprawl.

#### VolunteerMatch

<<http://www.volunteermatch.org>> and  
<<http://www.helping.org>>

These websites serve to connect individuals interested in volunteering with nonprofit organizations needing volunteer assistance. Individuals and groups seeking volunteer opportunities are encouraged to visit the site, as are nonprofit organizations seeking to tap into a growing pool of volunteer talent. There is no charge for this service.

## Calendar

#### Blending Art and Science in River Management

You are invited to attend the 5<sup>th</sup> River Management Society Symposium in Charleston, SC April 19-22, 2000. The interesting program includes presentations on river/watershed management and restoring river ecology by EOEI Secretary Bob Durand and many other nationally recognized researchers and river managers. Maria Van Dusen, and other members of the Northeast RMS Chapter, will be holding a caucus for the northeast and attending many of the panels and field trips. Evening entertainment includes Rivers and Art as portrayed through music and dance. For a registration packet, please contact Barry Beasley, Symposium Chair, at 803-734-9095 in South Carolina.

The **Millennium Wetland Event** is the title of an international environmental conference scheduled for August 6-12, 2000 in Quebec City. Among the dozens of symposia topics to be presented are floodplain forests/restoration, wetland responses to changes in water quality and quantity, constructed wetlands for wastewater treatment/restoration of aquatic ecosystems, public water supply wellfields, and freshwater and coastal fish habitat conservation. More information is available on the Web at <<http://www.cqyb.qc.ca/wetland2000>> or by calling Elizabeth MacKay at (418) 657-3853.

The **6<sup>th</sup> National Volunteer Monitoring Conference: Moving into the Mainstream** will be held April 26-29, 2000 in Austin, Texas. This conference, designed for new and experienced volunteer program coordinators will emphasize information sharing and exploring better ways to move our programs into the mainstream. It will include interactive skill-building workshops, presentations, topical breakout sessions, field trips, posters and exhibits. For more information, visit the EPA's volunteer monitoring homepage at <[www.epa.gov/OWOW/monitoring/vol.html](http://www.epa.gov/OWOW/monitoring/vol.html)>.

The International Conference on Riparian Ecology and Management in Multi-Land

**Use Watersheds** will be held in Portland, Oregon from August 27-31. This is an event of the American Water Resources Association, and is co-sponsored by the Natural Resources Conservation Service. The conference will provide a forum for discussion of biological, physical, chemical, social, and economic aspects of riparian areas and stream corridors. For more information, visit <[www.awra.org/meetings/Portland/Portland.html](http://www.awra.org/meetings/Portland/Portland.html)> or contact Bruce Newton at the National Water and Climate Center, at <[bnewton@wcc.nrcs.gov](mailto:bnewton@wcc.nrcs.gov)>.

On March 31-April 1, The University of Rhode Island is hosting **Vernal Pools of the Northeast** a conference focusing on vernal pools and ecology, conservation and education. On Friday, March 31, current research papers will be presented by field ecologists. Presentations on Saturday, April 1, will feature examples of conservation strategies and educational programs available for protecting vernal pools. For registration information, contact URI Conference Office, 401-874-2170. For additional information, contact Stafford Madison, U.S. EPA, 617-918-1622. Registration deadline is March 15.

#### Deerfield River Watershed Forum

On Saturday, March 18 the Deerfield River Watershed Association and the Deerfield River Watershed Team of the Massachusetts Executive Office of Environmental Affairs will host an educational forum on the Deerfield Watershed at Mohawk Trail Regional High School in Buckland from 8:30AM - 2:30PM. This is an opportunity to learn about issues that effect the health of the Deerfield River Watershed. You will also have a chance to interact with resource specialists and neighbors interested in protecting the natural resources of the watershed.

Bob Durand, Massachusetts Secretary of Environmental Affairs, is scheduled to be the Keynote Speaker. Workshop sessions will include: Stewardship for Home Owners, River Uses, Threats to the Watershed,

Wildlife and Habitat, Toxic Spills, Water Quality, and Open Space. There will also be informative displays and exhibits available for viewing. The \$5.00 registration fee includes lunch. Call (413) 773-7899 for registration information.

## Books, Reports and Videos

*After the Rain: Urban Runoff* is the title of a video released last fall by the Oregon State University Extension Service. The purpose of the video is to raise citizen awareness of the adverse impact various seemingly innocuous activities (e.g., car washing, keeping pets, lawn maintenance) can have on nearby waterbodies and our ability to use them for drinking, fishing, swimming, etc. Copies of the video are available by sending a check for \$19.95 made out to Oregon State University to: Publication Orders, Extension and Experiment Station Communications, OSU, 422 Kerr Administration Building, Corvallis, OR 97331-2119. Further information about the video and other water-related educational materials is available on the Web at <<http://www.eesc.orst.edu>>.

*Water Conservation - Managing Our Precious Liquid Asset* highlights the importance of water conservation and illustrates practical ways to save water. Included in the video is a discussion of residential water use and how much water consumption comes from specific areas of the residence, such as faucets, toilet use, laundry, and bathing/showering. The video (#WWVTPE33) costs \$12 and is available from the National Small Flows Clearinghouse at (800) 624-8301 or <[nsfc\\_orders@estd.wvu.edu](mailto:nsfc_orders@estd.wvu.edu)>.

*Ready, Set, Present!* is now available from the Massachusetts Water Watch Partnership to monitoring groups who want to learn how to deliver their data to their intended audiences, or who are just looking for examples and new ideas. Chapters include: "Graphics and other Tools Demystified", "Say it in Print", "Live Presentations", "Exhibits", "Working with the Media", and "Off the Beaten Path" which covers innovative examples. Check our web site for a preview (<http://www.umass.edu/tei/mwwp/datapresmanual.html>)—mostly text; graphics will be uploaded later. The manual is free to MassWWP members. Cost for others is only \$5 per copy to cover shipping and handling. Call 413/545-5531 or email [mfwalk@tei.umass.edu](mailto:mfwalk@tei.umass.edu) to place your order.

The *Septic Education Kit* is a homeowner-oriented, multi-media toolbox containing everything an educator needs to set up and promote a program on nonpoint source pollution from failing septic systems. This kit was developed through a NOAA-funded

project at Washington state's Padilla Bay National Estuarine Research Reserve to develop a curriculum for adults. The US Department of Commerce is now producing an improved version for national distribution. E-mail [cangell@padillabay.gov](mailto:cangell@padillabay.gov). Tel: (800) 553-6847.

The "**Getting in Step**" guidebook (produced by the Council of State Governments) provides tools necessary for developing and implementing effective watershed outreach plans. Designed for watershed practitioners trained in the sciences, this guide will help you address public perceptions, promote scientifically sound management practices, and inform and motivate potential stakeholders. It's now available for downloading in PDF format at <http://www.statesnews.org/gettinginstep.htm>

### **Dry Summer continued from page 2**

#### **What you can do:**

Support the Water Resources Conservation and Efficiency Act. This bill will strengthen state and local water use efficiency and conservation programs and provide funding for research to determine the streamflows necessary to maintain healthy aquatic ecosystems. Massachusetts Audubon Society is assembling a portfolio of photos and newspaper articles chronicling the problems with low flow and groundwater draw-down to share with Committee members. If you have photos or copies of articles to share from watersheds around the state, please call Lou Wagner at Mass. Audubon (781) 259-9500.

Learn about your communities' water usage and conserve water using low-flow fixtures and water-wise landscaping. Know where your water comes from and where the town wells are located. Learn about water rates and how these affect water use.

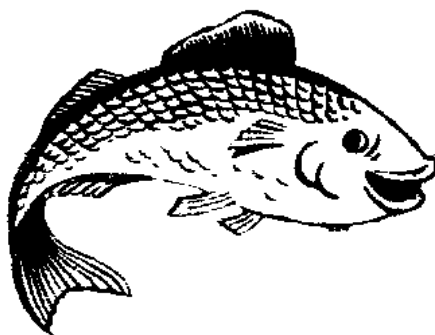
Stream Teams may want to request to include information in newsletters sent out by water suppliers. Use educational information including rates of water use, ways to conserve, and why conservation is important. Encourage your town to use Environmental Zoning and comprehensive water planning.

To get involved in the above initiatives, contact the following watershed associations: Ipswich River Watershed Association (978) 887-8404, Charles River Watershed Association (617) 965-5975, Neponset River Watershed Association (781) 575-0354. For more information on drought, check out these web links: EPA's drought management page: [[www.epa.gov/owm/drouhome.htm](http://www.epa.gov/owm/drouhome.htm)] and The National Drought Mitigation Center [[enso.unl.edu/ndmc/](http://enso.unl.edu/ndmc/)].



### **Save a Little Something on Your Taxes**

Want to actually save something on your taxes? How about the Bald Eagle? Or the Loggerhead Sea Turtle? Or the Northern Right Whale? And then there is the Showy Lady's-slipper and the Winged Monkey Flower! There are over 400 rare, threatened and endangered plant and animal species in Massachusetts, all of which are in dire need of protection. The Massachusetts Natural Heritage and Endangered Species Program works to protect and conserve these species and their habitats. If you share our belief that the wildlife of this state needs and deserves protection then please give generously on your Massachusetts income tax form to the Natural Heritage and Endangered Species Fund. You've got over four hundred new friends counting on you.



### **A Tale of Two Rivers, continued from page 1**

foundation for an anchor forge and nail factory. Archaeological and historic surveys will be conducted to document any physical remains of its various uses through time.

Luckily, the link to its most recent usage is embodied in Doug Gray, Parks and Forestry Superintendent for the Town of Plymouth, who worked at the site in the 1960's and later accepted ownership of the property on behalf of the Town after the structure burned to the ground. Within his lifetime, Doug has seen renewed interest in Town Brook by the citizenry in creating the first leg of a "Pilgrim Trail" linking the downtown harbor to Billington Sea upstream. With luck and hard work by many partners, he'll see the alewives taking the same journey again within its banks. The Dam Decommissioning Task Force is led by Karen Pelto of the Riverways Programs.

## **Our Mission**

The Mission of the Riverways Programs is to promote the restoration and protection of the ecological integrity of the Commonwealth's rivers and adjacent lands. Recognizing the uniquely important role of rivers in the state's ecology, the Department initiated the Riverways Programs in 1987.

### **Riverways Programs 617-626-1540**

**Maria Van Dusen,**  
*Riverways Coordinator 626-1540*

**Joan C. Kimball,**  
*Adopt-A-Stream Coordinator  
626-1544*

**Karen I. Pelto,**  
*River Restore Coordinator 626-1542*

**Russell A. Cohen,**  
*Rivers Advocate 626-1543*

**Cindy DelPapa,**  
*Stream Ecologist 626-1645*

**Patricia Sheppard,**  
*Grants Administrator 626-1541*

**Dave Gabriel,**  
*Grafix 626-1568*

### **Special Programs**

**Uma Mirani,**  
*Urban Rivers 626-1546*

**Liz Mikulecky,**  
*Westfield River Outreach*

**Rachel Calabro,**  
*Stream Team Technical Assistant  
626-1547*

**Amy Singler,**  
*Stream Team Organizer 626-1548*

**Kathleen O'Connor,**  
*Publications Intern 626-1541*

**Anne Marie Greaney,**  
*River Restore Assistant 626-1542*

# Riverways Programs

---

**Department of Fisheries, Wildlife &  
Environmental Law Enforcement**

100 Cambridge Street, Room 1901  
Boston, Massachusetts 02202  
(617) 626-1540  
[www.state.ma.us/dfwele/river/riv\\_toc.htm](http://www.state.ma.us/dfwele/river/riv_toc.htm)

***INSIDE!!***

**Riverways Spring 2000 Newsletter**

Plan now for a Dry Summer ..... 1

A Tale of Two Rivers ..... 1

**Special Section:**

**The Massachusetts Watershed Initiative**

**Moving into the 2000s ..... 3-8**

Urban Update: Mill Creek ..... 9

Adopt-A-Stream: Why Stream Teams? ..... 10

MDFA and Farmers ..... 12

Flow Forum ..... 13

Biodiversity Days ..... 13

Understanding TMDLs ..... 14

Legislative Updates ..... 15

Resources and Grants ..... 16



*Wintery scene along the Sudbury River during the winter of 1998.  
Photo by Russell Cohen*